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Fracture sacrum with neurogenic bladder dysfunction

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CLINICAL PROFILE

A 31-year-old sailor fell from the top deck of a ship and landed on the deck below on his buttocks. He could get up and walk, but complained of constant pain in the sacrococcygeal region. He was unable to pass urine, and had to be catheterized. Neurological evaluation revealed sensory blunting over sacral dermatomes and hypotonia of anal sphincter. Sacral radiograph revealed transverse fracture through mid-sacrum (Fig 1), with proximal over-riding of the distal fragment. MRI sacrum showed fracture with stretching of nerve roots (Fig 2).

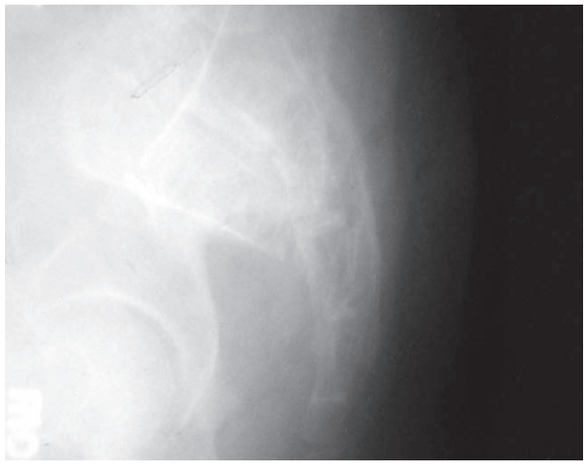

Fig 1: X-ray showing fracture sacrum

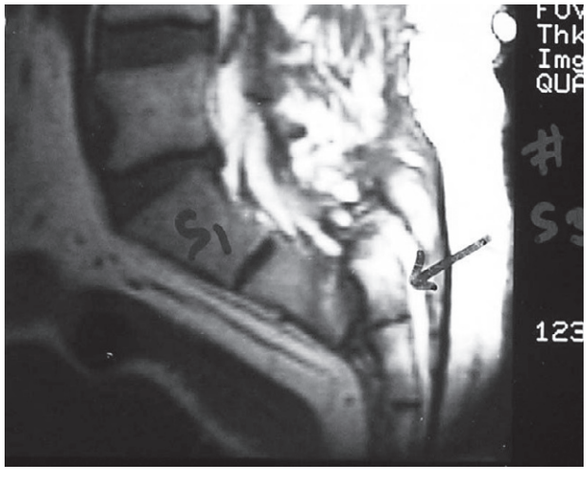

Fig 2: MRI showing fracture sacrum

DISCUSSION

Isolated sacral fractures are rare. More often, these occur in combination with pelvic rim fractures. Careful neurological examination will aid in suspecting this rare injury. Perineal numbness with or without ankle weakness should alert the surgeon to the possibility of sacral fracture. Isolated fractures of the sacrum occur due to direct axial loading. Classification as provided by Denis et al[1] is currently most useful: Zone I injuries occur vertically through the sacral ala without involving the neural foramina, Zone II injuries are vertical injuries involving several foramina, while Zone III injuries involve the spinal canal. Transverse fractures constitute of Zone III fractures (that involve the spinal canal) and are accompanied by neurological deficits. Sacroiliac stability is unaffected. These injuries require decompression, which can be performed by posterior approach. Sacral deroofing, foraminotomy and neural decompression is performed, and patient is observed for neurological recovery.

REFERENCE

1. Denis F, Denis S, Comfort T. Sacral fractures: an important problem. Retrospective analysis of 236 cases. *Clin Orthop* 1988; 227:67-81.

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